

GP-302970

**CURRENT REGULATION FOR A FIELD  
WEAKENING MOTOR CONTROL SYSTEM AND METHOD**

**ABSTRACT OF THE DISCLOSURE**

A control system and method for an electric machine includes a first calculation module that receives a modified torque command and a

5 calculated stator flux command and that generates first and second current commands and first and second voltage commands. A voltage magnitude calculation module generates a voltage magnitude based the first and second voltage commands. A reference voltage calculator module generates a reference voltage based on a DC link voltage, an

10 angular stator velocity and the first and second current commands. A flux weakening module generates the calculated flux command based on the angular stator velocity, the reference voltage and the voltage magnitude.